Audit Report

THE GROUND BASED COMMON SENSOR PROGRAM

Report Number 99-224 July 26, 1999

Office of the Inspector General
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Acronyms

AQF	Advanced Quickfix
GBCS	Ground Based Common Sensor
IOT&E	Initial Operational Test and Evaluation
ONS	Operational Needs Statement

INSPECTOR GENERAL
DEPARTMENT OF DEFENSE
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July 26, 1999

MEMORANDUM FOR AUDITOR GENERAL, DEPARTMENT OF THE ARMY

SUBJECT: Audit Report on the Ground Based Common Sensor Program
(Report No. 99-224)

We are providing this report for review and comment. We conducted the audit in response to a congressional request from the House Permanent Select Committee on Intelligence. The Intelligence Authorization Act for FY 1999 "requests the Secretary of Defense to conduct an Inspector General audit of the Ground Based Common Sensor Program; its costs, its technical approach, and management." Finding A responds to the congressional request. We considered management comments on a draft of this report when preparing the final report.

DoD Directive 7650.3 requires that all recommendations be resolved promptly. The Assistant Secretary of Army (Acquisitions, Logistics, and Technology) comments were partially responsive. We request that additional comments on Recommendations B.1 and B.2 be provided by September 27, 1999.

We appreciate the courtesies extended to the audit staff. For additional information on this report, please contact Mr. Robert K. West at (703) 604-8983 (DSN 664-8983) (rwest@dodig.osd.mil) or Ms. Eleanor A. Wills at (703) 602-1613 (DSN 332-1613) (ewills@dodig.osd.mil). See Appendix D for the report distribution. The audit team members are listed on the back cover.

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Assistant Inspector General
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Office of the Inspector General, DoD

Report No. 99-224 **July 26, 1999**
(Project No. 8AD-5033.01)

The Ground Based Common Sensor Program

Executive Summary

Introduction. The audit was performed in response to a congressional request from the House Permanent Select Committee on Intelligence. The Intelligence Authorization Act for FY 1999 "requests the Secretary of Defense to conduct an Inspector General audit of the Ground Based Common Sensor Program; its costs, its technical approach, and management." Finding A responds to the congressional request. In addition to this report, the Office of the Inspector General, DoD, issued Report No. 99-173, "Ground Based Common Sensor System Fielding," June 2, 1999.

The Ground Based Common Sensor Program consisted of the Ground Based Common Sensor-Light System, the Ground Based Common Sensor-Heavy System, and the Advanced Quickfix System. All three of the systems included the same subsystem components, configured on different platforms. The Program Executive Office for Intelligence, Electronic Warfare and Sensors stated that each of the systems was considered an Acquisition Category III program. The research and development for the Ground Based Common Sensor-Light System, the Ground Based Common Sensor-Heavy System, the Advanced Quickfix System, and the subsystems were developed under one Army Research, Development, Test, and Evaluation funding line, DL12, "Signals Warfare Development." For the purpose of this audit, we will refer to the three systems as the Ground Based Common Sensor Program.

In 1989, the Ground Based Common Sensor Program concept was considered the answer to major upgrade requirements for six different Intelligence, Electronic Warfare and Sensor systems. The Ground Based Common Sensor Program was to provide division commanders with the capability to search, intercept, and listen to signals intelligence data and to precisely locate the signal's point-of-origin for hard-kill or electronic attack. The Ground Based Common Sensor Program was to be fielded in three platform configurations, the Ground Based Common Sensor-Light, the Ground Based Common Sensor-Heavy, and the Advanced Quickfix.

Objectives. Our objective was to evaluate the adequacy of the Ground Based Common Sensor Program's costs, technical approach, and management. The audit also evaluated the Ground Based Common Sensor Program's management control program as it related to the audit objectives.

Results. The Ground Based Common Sensor Program was not managed efficiently and effectively. As a result, the Ground Based Common Sensor Program spent 9 years in the engineering, manufacturing, and development phase, and the Army spent $902 million on the development and procurement of the Ground Based Common Sensor Program and its subsystems. Also, the Government accepted seven limited-procurement-urgent Ground Based Common Sensor-Light Systems that never passed initial operational test and evaluation and planned to accept five more systems upon the production contract close-out (finding A).

The Army planned to transition from the Ground Based Common Sensor Program to the Prophet System, entering the program life cycle at Milestone II without the documentation required for a Milestone II decision. Specifically, the Army had not prepared a valid mission needs statement or analysis of alternatives. By not complying with prescribed milestone exit criteria, the Prophet System would be in noncompliance with DoD Regulation 5000.2-R and would face increased risk (finding B).

The Program Executive Office for Intelligence, Electronic Warfare and Sensors did not fully implement an effective management control program. As a result, the management control program did not provide reasonable assurance that the resources allocated were safeguarded or protected adequately against waste, fraud, or mismanagement and that organizational, operational, or administrative objectives were accomplished (finding C).

Summary of Recommendations. We recommend that the Assistant Secretary of the Army (Acquisition, Logistics, and Technology) require a valid mission needs statement, require an appropriate analysis of alternatives, and determine the appropriate acquisition category for the Prophet System. We recommend that the Program Executive Officer for Intelligence, Electronic Warfare and Sensors implement an overall management control program to assess the functional levels of each program, provide training to managers, and review program management and administrative controls over timesheets and travel vouchers for the Ground Based Common Sensor Program.

Management Comments. The Office of the Assistant Secretary nonconcurred with the recommendations to prepare a mission needs statement and an analysis of alternatives and concurred with the recommendation related to determining an appropriate acquisition category for the Prophet System. The Assistant Secretary stated that the Prophet System has not been designated as an Acquisition Category I program and that mission needs and an analysis of alternatives have been sufficiently articulated in other existing documents. The Program Executive Officer for Intelligence, Electronic Warfare and Sensors concurred with the finding and recommendations and stated that the Program Executive Office has already taken steps to improve its management control processes. A discussion of management comments is in the Findings section of the report and the complete text is in the Management Comments section.

Audit Response. Comments from the Assistant Secretary of the Army (Acquisition, Logistics, and Technology) were partially responsive. The Assistant Secretary should require the Prophet System to prepare a mission needs statement and an analysis of alternatives because the program's research, development, test, and evaluation costs and production costs easily exceed the thresholds for an Acquisition Category I program. In addition, the Army would benefit from developing a mission needs statement and an analysis of alternatives because the original program concept was developed in the 1980s and was based on the environment of the legacy systems that were fielded in the 1970s and 1980s. The analysis of alternatives would help decisionmakers determine whether the Prophet System would be the most cost-effective answer to the battlefield deficiencies identified in the mission needs statement. Further, in order to preclude a repeat of the history of nonperformance that plagued the Ground Based Common Sensor Program, it is imperative that the Army not short-circuit sound acquisition procedures with the Prophet System, but proceed responsibly in an event-driven, as opposed to schedule driven, manner. We request additional management comments from the Assistant Secretary of the Army (Acquisition, Logistics, and Technology) by September 27, 1999.

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The audit was performed in response to a congressional request from the House Permanent Select Committee on Intelligence. The Intelligence Authorization Act for FY 1999 "requests the Secretary of Defense to conduct an Inspector General audit of the Ground Based Common Sensor Program; its costs, its technical approach, and management." Finding A responds to the congressional request.

Background

The Ground Based Common Sensor (GBCS) Program, as stated in the request for audit, consists of the GBCS-Light System, the GBCS-Heavy System, and the Advanced Quickfix (AQF) System. All three systems consist of the same subsystem components configured on different platforms. The Program Executive Office for Intelligence, Electronic Warfare and Sensors (the Program Executive Office) stated that each of the systems was considered an Acquisition Category III program[1]. The research and development for the subsystems and the platform configurations were under one Army Research, Development, Test, and Evaluation funding line, DL12, "Signals Warfare Development." For the purpose of this audit, we will refer to the three systems as the GBCS Program.

Program History. In July 1988, the Commander, 82d Airborne Division, Department of the Army, signed the operational needs statement (ONS) for a Highly Mobile Radio Receiving System to replace the Teammate System. In November 1988, the Army held an in-process review to consider the deficiencies of several fielded Signals Intelligence and Electronic Warfare systems. Those systems were the Trailblazer, Teammate, Quickfix, Teampack, Trafficjam, and Tactical Communications Jammer Systems, which were all Acquisition Category III systems fielded in the 1970s and 1980s. The Trailblazer, Teammate, Quickfix, and Teampack Systems collect and report signal intelligence data to division commanders. The Trafficjam and Tactical Communications Jammer Systems receive, jam, or harass tactical communications links. None of the six systems ever fully met their operational requirements, yet the Army approved each for fielding at their respective Milestone III decisions.

In 1989, the Army decided on a new approach to meet the operational requirements for these systems. The new approach would consolidate the systems' mission requirements and provide a quick solution to meet the 82d Airborne Division's ONS through an upgrade program that would produce

[1]Acquisition Category III programs are defined as those acquisition programs that do not meet the criteria for an Acquisition Category I, IA, or II program. Acquisition Category I and II programs are estimated to require an eventual total expenditure for research, development, test, and evaluation of more than $355 million and $135 million in FY 1996 constant dollars, respectively. Programs can also be designated as Acquisition Category I or II programs by the Milestone Decision Authority or the Under Secretary of Defense for Acquisition and Technology even though they do not exceed the estimated expenditure thresholds.

common sensor systems for both heavy and light divisions. The new upgrade program was the Intelligence Electronic Warfare Common Sensor Program, Project Number PMSW-130-92, consisting of the GBCS-Light System, the GBCS-Heavy System, and the AQF System. The 1993 Milestone IV documentation for the six legacy systems states that presentations, discussions, and decisions comprising a de facto Milestone IV decision took place from October 1988 through December 1991 and resulted in the Acquisition Category III Intelligence Electronic Warfare Common Sensor Program, which is referred to in this report as the GBCS Program. The de facto Milestone IV decision was the Milestone II decision for the GBCS Program. The GBCS Program was based on the mission needs statements of the six legacy systems that it was to replace. The GBCS Program entered the program life cycle at Milestone II, the Engineering, Manufacturing, and Development Phase, in FY 1991 and stopped in FY 1999 while still in Milestone II. The program never had a Milestone III decision to enter the Production Phase. The Army planned to transition from the GBCS Program to the Prophet System in FY 1999, with the Prophet System entering the life cycle at Milestone II.

Description of the GBCS System. The GBCS Program was to provide division commanders with the capability to search, intercept, and listen to signals intelligence data and to precisely locate the signal's point-of-origin for hard-kill or electronic attack. The GBCS Program is composed of three major subsystems, the Tactical Communications Jammer-Advanced, the Communications High-Accuracy Location System Exploitable, and the Common Modules Electronic Intelligence System. The Tactical Communications Jammer-Advanced intercepts and locates conventional data, digital data, burst, and low-probability-of-intercept communications; the Communications High-Accuracy Location System Exploitable precision locates communication emitters for targeting; and the Common Modules Electronic Intelligence System identifies and locates radar threats.

The Army planned to field the GBCS Program using three platform configurations: the GBCS-Light deployed on high-mobility multipurpose wheeled vehicles to support light divisions, the GBCS-Heavy deployed on tracked vehicles to support armored and mechanized infantry divisions, and the AQF deployed on the Blackhawk Helicopter to support Army divisions and armored cavalry regiments. However, the Army canceled the GBCS-Heavy System in June 1998 because of affordability issues and performance shortfalls identified during development testing. The U.S. Marine Corps was using the same subsystems as the Army for its Mobile Electronic Warfare Support System product improvement program. The Mobile Electronic Warfare Support System was configured on a Light Armored Vehicle platform. The scope of the audit did not include a review of the Marine Corps' Mobile Electronic Warfare Support System Program.

DoD Directive 5000.1. DoD Directive 5000.1, "Defense Acquisition," March 15, 1996, provides broad policies and principles for all DoD acquisition programs and establishes a disciplined, yet flexible, management framework that effectively translates operational needs into stable, affordable acquisition programs. In addition, the Directive states that acquisition managers must implement rigorous management control systems for effective and accountable program management. Also, the Directive requires that managers at all levels make program stability a top priority and strive to ensure stable program funding throughout the program's life cycle after DoD initiates an acquisition program.

DoD Regulation 5000.2-R. DoD Regulation 5000.2-R, "Mandatory Procedures for Major Defense Acquisitions Programs (MDAPs) and Major Automated Information System (MAIS) Acquisition Programs," March 15, 1996, establishes a simplified and flexible management framework for translating mission needs into stable, affordable, and well-managed major defense acquisition programs and major automated information systems acquisition programs. The regulation discusses the use of integrated product teams consisting of representatives from all appropriate functional disciplines working together to build successful programs. In addition, the regulation states that the program manager should use the technical representatives from the Defense Contract Management Command, usually located at the contractor facilities, and develop a memorandum of agreement between the offices to specify the duties to be performed on the specific program.

DoD Directive 5010.38. DoD Directive 5010.38, "Management Control Program," August 26, 1996, requires DoD managers to implement a comprehensive strategy for management controls that provides reasonable assurance that programs are efficiently and effectively carried out in accordance with applicable laws and to evaluate the adequacy of those controls.

DoD Instruction No. 5010.40. DoD Instruction No. 5010.40, "Management Control Procedures," August 28, 1996, requires that each DoD Component develop a management control program that establishes a management control process, maintains an inventory of its assessable units, and evaluates the effectiveness of its management controls through a process or mechanism that provides feedback for corrective actions.

Objectives

Our objective was to evaluate the adequacy of the GBCS Program's costs, technical approach, and management. The audit also evaluated the GBCS Program's management control program as it related to the audit objectives. Inspector General, DoD, Report No. 99-173, "Ground Based Common Sensor System Fielding," June 2, 1999, addresses the Army's plan to field four GBCS-Light Systems to the 82d Airborne Division. See Appendix B for a summary of prior coverage related to the audit objectives.

Other Matters of Interest

Common Modules Electronic Intelligence System Duplication. The House Permanent Select Committee on Intelligence noted that $1.5 million for Common Modules Electronic Intelligence System procurement was requested twice in the February 1998 Budget Request, Exhibit P-5, "Weapon Other Procurement Army Analysis." Consequently, the committee recommended a reduction of $1.5 million.

The Office of the Product Manager GBCS/AQF explained that the first $1.5 million request was for the current production of two GBCS-Light Systems and the second $1.5 million request was to upgrade two previously procured GBCS-Light Systems. The appearance of duplication occurred because an asterisk was erroneously typed behind both $1.5 million requests. The asterisk that was keyed to the statement "Provides current Common Modules Electronic Intelligence System hardware configuration for GBCS-Light Systems procured in prior fiscal years" should have been placed only after the second $1.5 million request.

Year-2000 Compliance. The Army reported the GBCS Program and the legacy systems as mission-critical systems for year-2000 reporting purposes. Therefore, the audit included a review to determine whether the GBCS Program was year-2000 compliant. Because neither the GBCS Program nor the Prophet System was to be fielded by the year 2000, we reviewed the legacy systems. The Trailblazer, Teammate, and Quickfix Systems were certified year-2000 compliant. The Trafficjam System had no date-time function and, consequently, had no year-2000 issues.

A. The Ground Based Common Sensor Program

The Army did not manage the GBCS Program efficiently and effectively because of several poor business decisions and practices. The Milestone Decision Authority did not notify the Assistant Secretary of the Army (Acquisition, Logistics, and Technology) that the GBCS Program should have been elevated to an Acquisition Category I or II program. The management structure was fragmented, which was not conducive to effectively managing the GBCS Program and integrating the subsystems. The Source Selection Authority selected an inexperienced engineering, manufacturing, and development contractor and entered into premature production using a build-to-model contract that was based upon an immature, unproven model. Additionally, late delivery of immature Government-furnished equipment and poor contract oversight resulted in cost overruns during the engineering, manufacturing, and development contract. Furthermore, GBCS Program testing did not accurately reflect the performance of the systems. As a result, the GBCS Program spent 9 years in the engineering, manufacturing, and development phase, and the Army spent $902 million on the development and procurement of the GBCS Program and its subsystems. Also, as of January 1999, the Government accepted seven limited-procurement-urgent GBCS-Light Systems that never passed initial operational test and evaluation (IOT&E) and planned to accept five more systems upon the production contract close-out.

GBCS Program Requirements

The GBCS Program was based on two separate acquisition requirements. The GBCS Program was to satisfy the operational requirements of the six fielded Signals Intelligence and Electronic Warfare Division systems and consisted of the GBCS-Light System, the GBCS-Heavy System, and the AQF System. The GBCS Program also was to develop an interim GBCS-Light System (the GBCS-ONS System) to provide a quick solution to meet the 82d Airborne Division's ONS.

82d Airborne Division's Requirements. On July 8, 1988, the Commanding General, 82d Airborne Division, signed an ONS for a rapidly deployable, highly mobile radio receiving system that could receive, record, and determine the direction of transmitted signals while moving with the supported force. The ONS stated that the existing system, Teammate, could not be transported by C-130 aircraft without being dismantled; could not keep pace with the high-mobility multipurpose wheeled vehicle; and could not operate during or immediately after a move. The Deputy Chief of Staff for Operations and Plans, Department of Army, validated the 82d Airborne Division's ONS in February 1989. The GBCS-ONS System was classified as limited-procurement-urgent and given top priority within the GBCS Program. The original plan for the

GBCS-ONS System was to integrate a Tactical Communications Jammer-Advanced System onto a high-mobility multipurpose wheeled vehicle and to retrofit the GBCS-ONS System after the GBCS-Light System was completed.

Department of the Army Requirements. The "Required Operational Capability for the Ground Based Common Sensor Light and Heavy," October 1990, and the "Operational Requirements Document for Advanced Quickfix," October 1992, expanded the 82d Airborne Division's ONS to all military intelligence battalion units in the Army. These two operational requirements documents for the GBCS Program integrated the requirements of the six legacy systems. The operational requirements documents added the following capabilities to the 82d Airborne Division's requirements:

- intercepting and locating signals in a larger frequency range,
- intercepting and locating electronic intelligence signals,
- electronic countermeasures (jamming), and
- precision targeting.

Because the GBCS Program was not considered a new start, it was allowed to begin in Milestone II and never had a milestone decision review for Milestone 0 or I. As a result, the GBCS Program was not based on an identified, documented, and validated mission needs statement as required by DoD Regulation 5000.2-R. The 82d Airborne Division's ONS was generated specifically for the 82d Airborne Division and did not identify, document, and validate the mission need for the Army as a whole.

Program Oversight

The Milestone Decision Authority did not notify the Assistant Secretary of the Army (Acquisition, Logistics, and Technology) that the GBCS Program should have been elevated to an Acquisition Category I or II program even though the program exceeded the Acquisition Category I or II thresholds and continually failed to meet its cost, schedule, and performance baselines. The Milestone Decision Authority for the GBCS Program was the Program Executive Officer for Intelligence, Electronic Warfare and Sensors (the Program Executive Officer).

Acquisition Category Designation. The Program Executive Officer stated that the GBCS Program consisted of three separate Acquisition Category III programs. The Integrated Program Summary from the Milestone IV Documentation Package for the six legacy systems stated that the Intelligence Electronic Warfare Common Sensor Program (the GBCS Program) was one Acquisition Category III program. In 1993, the Program Executive Office responded to a Memorandum to the Acquisition Community from the Deputy Assistant Secretary for Plans, Programs and Policy, recommending that the GBCS and the AQF be designated as two separate Acquisition Category III programs. Acquisition Category III programs required no formal status reporting mechanism from the GBCS Program's Milestone Decision Authority

to the Office of the Assistant Secretary of the Army (Acquisition, Logistics, and Technology); however, the office was kept apprised of program status through periodic program reviews, status briefings, and yearly updates during the Program Objective Memorandum process and budget cycles. Periodic executive summaries were provided to leadership within the Office of the Assistant Secretary of the Army (Acquisition, Logistics, and Technology) through the Program Executive Office/Secretary of the Army (Acquisition, Logistics, and Technology) liaison. However, in July 1997, the GBCS Program was placed on the Office of the Secretary of Defense's Test and Evaluation oversight list at the request of the Training and Doctrine Command System Manager.

Acquisition Category Reclassification. The Milestone Decision Authority did not notify the Assistant Secretary of the Army (Acquisition, Logistics, and Technology) that the GBCS Program should have been reclassified as an Acquisition Category II or I program. According to DoD Regulation 5000.2-R, Acquisition Category II programs are estimated to require an eventual total expenditure for research, development, test, and evaluation of more than $135 million in FY 1996 constant dollars, and Acquisition Category I programs are estimated to require an eventual total expenditure for research, development, test, and evaluation of more than $355 million in FY 1996 constant dollars. The following table shows that the GBCS Program exceeded the Acquisition Category II threshold of $135 million in 1992 and exceeded the Acquisition Category I threshold of $355 million in 1995. As of January 1999, the GBCS Program had spent $532.8 million in Research, Development, Test, and Evaluation funds. We were unable to determine how much was spent on the GBCS-Light Systems, the GBCS-Heavy Systems, and the AQF Systems because they were all funded with one Army Research, Development, Test, and Evaluation funding line and developed under one engineering, manufacturing, and development contract.

Research, Development, Test, and Evaluation Expenditures
(in millions)

Fiscal Year	Army RDT&E Expenditures	Army DCP Expenditures	Navy RDT&E Expenditures	Marine Corps DCP Expenditures	Total RDT&E Expenditures
1991	$ 24.3	$ 5.2	0	0	$ 29.5
1992	139.6	12.0	0	0	151.6
1993	60.7	15.1	0	$ 4.6	80 4
1994	42.3	15.5	$0.1	4.9	62.8
1995	49.6	15.7	2.5	3.4	71.2
1996	13.4	18.6	2.7	0	34.7
1997	15.9	19.8	1.0	3 0	39.7
1998	29 7	18.3	0.8	3.0	51.8
1999	*	8.0	0.2	2.9	11.1
Total	**$375.5**	**$128.2**	**$7.3**	**$21.8**	**$532.8**

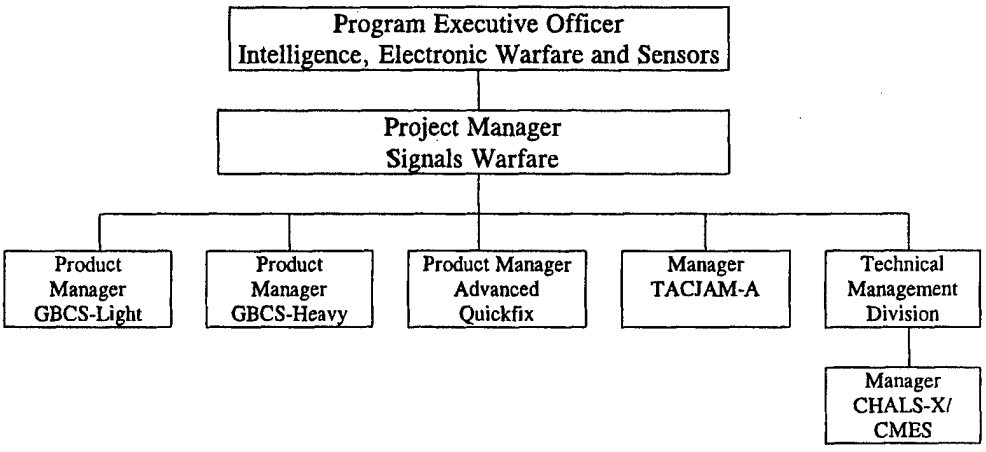
DCP Defense Cryptological Program
RDT&E Research, Development, Test, and Evaluation

*As of March 1999, the Office of the Under Secretary of Defense (Comptroller) put the GBCS Program's RDT&E funds for FY 1999 on hold.

Cost, Schedule, and Performance Baselines. The GBCS Program continually failed to meet its cost, schedule, and performance baselines. The Acquisition Plan, dated November 1990, estimated Research, Development, Test, and Evaluation costs of $110.7 million. In the October 1993 Acquisition Program Baseline, the Army revised the estimate for Research, Development, Test, and Evaluation costs to $201.0 million. The Army revised the estimate again in February 1995 to $202.4 million. As of January 1999, the GBCS Program spent $532.8 million on Research, Development, Test, and Evaluation funds. Costs for the GBCS Program are discussed in detail in the section of this finding titled "GBCS Program Costs."

The November 1990 Acquisition Plan scheduled a Milestone III decision for the GBCS Program in August 1994. That milestone decision never took place. The Army will never have a Milestone III Decision for the GBCS Program because, as of February 1999, the Army planned to transition from the GBCS Program to the Prophet System. The GBCS Program could not meet IOT&E entrance criteria and had to cancel IOT&E in 1994, 1995, 1996, and 1998. Performance of the GBCS Program is discussed in detail in the section of this finding titled "Testing."

Management Structure. The management structure of the GBCS Program was fragmented and was not conducive to effectively managing the GBCS Program and integrating the subsystems. The GBCS-Light System, the GBCS-Heavy System, the AQF System, and the subsystems (the Tactical Communications Jammer-Advanced, the Communications High-Accuracy Location System Exploitable, and the Common Modules Electronic Intelligence System) were all managed separately and reported to the Project Manager for Signals Warfare who had ultimate responsibility. Figure 1 shows the initial management structure of the GBCS Program.

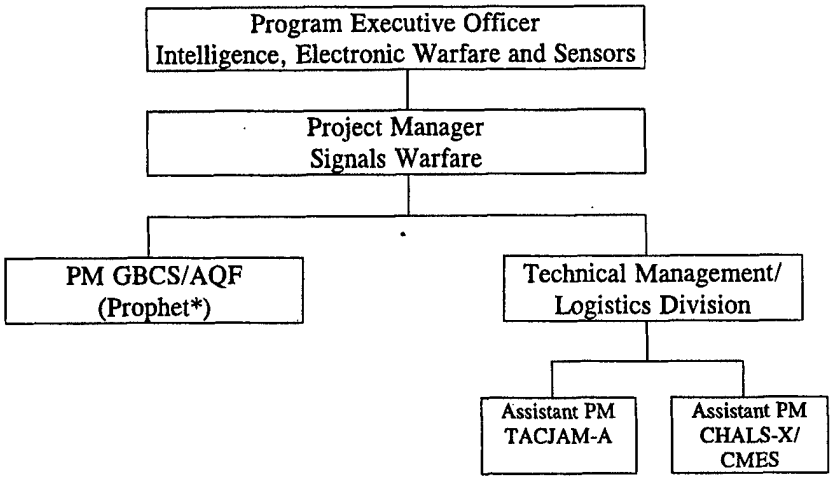


Note: This figure does not show all of the organizations of the Project Manager for Signals Warfare.

CHALS-X	Communications High-Accuracy Location System Exploitable
CMES	Common Modules Electronic Intelligence System
TACJAM-A	Tactical Communications Jammer-Advanced

Figure 1. Initial Management Structure of the GBCS Program

In April 1996, the Program Executive Officer for Intelligence Electronic Warfare and Sensors made a positive effort to restructure the management of the GBCS Program under one product manager. Since then, the Product Manager had more control over the GBCS Program; however, the subsystems continued to report to the Technical Management/Logistics Division. Figure 2 shows the management structure at the time of this audit.



Note: This figure does not show all of the organizations of the Project Manager for Signals Warfare.

CHALS-X	Communications High-Accuracy Location System Exploitable
CMES	Common Modules Electronic Intelligence System
PM	Product Manager
TACJAM-A	Tactical Communications Jammer-Advanced

*The Army planned to transition from the GBCS Program to the Prophet System in FY 1999.

Figure 2. Management Structure of the GBCS Program

Continuity of Program Knowledge. Vint Hill Farms, Virginia, was closed as part of the DoD base realignment and closure process. As a result, the Office of the Product Manager GBCS/AQF transitioned from Vint Hill Farms to Fort Monmouth, New Jersey, between September 1996 and September 1997. The GBCS Program lost most of its personnel during the move from Vint Hill Farms to Fort Monmouth. As of January 1999, only one person from Vint Hill Farms, the Project Manager for Signals Warfare, remained with the program. Despite the high personnel turnover, the upper management of the GBCS Program did not change much over the life of the GBCS Program. The Project Manager for Signals Warfare initially served as the Deputy Project Manager for Signals Warfare. He had been with the GBCS Program since the beginning of the program in 1991. The Program Executive Officer at the time of this audit had been in his position since July 1995. The Program Executive Officer before him was in the position for about 18 months, and before that he was the Project Manager for Signals Warfare for 4 years. Although the GBCS Program Office lost many experienced personnel as a result of its move from Vint Hill Farms to Fort Monmouth, the GBCS Program maintained continuity in the decisionmaking positions of the Project Manager for Signals Warfare and the Program Executive Officer.

GBCS Program Contract History

The GBCS Program had two prime contracts. The original contractor was Electrospace Systems, Incorporated (now Raytheon Systems Company). Raytheon had a cost-plus-award-fee contract for full-scale engineering development, which was modified to include a firm-fixed-price and a time-and-material effort. In November 1995, the Army awarded a firm-fixed-price, build-to-model production contract to Loral Corporation (now Lockheed Martin Federal Systems). In 1996 and 1997, the production contract was modified to include a cost-plus-award-fee and a time-and-material effort for work on the 1997 IOT&E and 1998 IOT&E efforts.

The Full-Scale Engineering Development Contract. The Source Selection Evaluation Board and the Source Selection Authority underestimated the technical complexities of the GBCS Program. The source selection for the engineering, manufacturing, and development of the GBCS Program was based on best value. The Source Selection Evaluation Board evaluated four individual proposals, and the Source Selection Authority did a comparison of the evaluations and selected Electrospace Systems, Incorporated, even though Electrospace was rated as only marginally satisfying the Government's requirements in the request for proposal. Electrospace showed deficiencies and weaknesses in antennae, electronic intelligence systems, and software development and was rated as requiring close Government monitoring.

On September 25, 1991, the GBCS Program awarded a $185.4 million cost-plus-award-fee contract to Raytheon Systems Company. The contract was for the GBCS System full-scale engineering development. The contract was to produce three engineering, manufacturing, and development systems of each system: three GBCS-Heavy Systems, three GBCS-Light Systems, and three AQF Systems. The Tactical Communications Jammer-Advanced and the Communications High-Accuracy Location System Exploitable systems were developed under the Project Manager for Signals Warfare and were provided to the Office of the Product Manager GBCS/AQF as Government-furnished equipment. The Common Modules Electronic Intelligence System was purchased directly from the contractor producer. The Office of the Product Manager GBCS/AQF provided the three subsystems to Raytheon as Government-furnished equipment.

Government-Furnished Equipment. Raytheon submitted a request for an equitable adjustment to the contract price in June 1993, because the Government's late delivery of Government-furnished equipment had impacted the program cost by about $4.5 million. The Government did not provide Raytheon with interface control documents for the Government-furnished subsystems, and Raytheon was unable to obtain them from the subsystems' contractors. The subsystems that were provided as Government-furnished equipment were not mature systems, and changes to the subsystems software were not always completely identified when new versions were delivered to Raytheon. Consequently, Raytheon was unable to successfully integrate the subsystems.

Contract Administration. The Defense Contract Management Command did not perform its normal administration functions as stated in the Federal Acquisition Regulation because the Office of the Product Manager GBCS/AQF used engineers from the Office of the Project Manager for Signals Warfare to sign the DD Form 250, "Certificate of Conformance," reports. The engineers were not involved in the daily oversight activities at Raytheon. DoD Regulation 5000.2-R states that the program managers are to make maximum use of Defense Contract Management Command personnel at contractor facilities. Assignment of specific technical responsibilities should be reflected in a memorandum of agreement between the program manager and the Defense Contract Management Command. In the absence of a memorandum of agreement, technical representatives perform the administration duties as outlined in the Federal Acquisition Regulation, Part 42.302.

Limited-Procurement-Urgent Contract. In 1994, the Program Executive Officer approved and signed the Limited-Procurement-Urgent Decision for 12 GBCS-Light Systems. Later that same year, the Office of the Product Manager GBCS/AQF modified the Raytheon contract for the production of 6 of the 12 GBCS-Light Systems. The Raytheon contract required 140 contract modifications from 1991 through 1999.

In March 1995, Raytheon warned the Office of the Product Manager GBCS/AQF that the GBCS Program was too immature and was not ready for production. In September 1995, the Government issued a stop-work order on the technical data package and accepted the package at only 70 percent completion. The Government accepted delivery of the six limited-procurement-urgent GBCS-Light Systems even though they did not meet contract specifications. The March 1997 Cost and Schedule Status Report reflected a $45.7 million contract cost overrun. In September 1998, the Government closed out the Raytheon contract.

Production Contract. In November 1995, Loral Corporation (now Lockheed Martin Federal Systems) was awarded a build-to-model, indefinite-delivery and indefinite-quantity, firm-fixed-price production contract for six GBCS-Light Systems and three AQF Systems. The Office of the Product Manager GBCS/AQF modified the build-to-model contract in 1996, to include a cost-plus-award-fee and a time-and-material effort to find and fix deficiencies and prepare the system for IOT&E in 1998. The Office of the Product Manager GBCS/AQF modified the contract again in 1997, for an IOT&E in 1999. In August 1997, Lockheed Martin Federal Systems negotiated a $7.8 million contract restructure with the Government because the system models were incomplete, the hardware was not available, and the Raytheon data provided were incomplete. The build-to-model contract price as of September 30, 1998, was $248 million.

From 1991 through January 1999, the total cost of the overall GBCS Program, including development costs for the Tactical Communications Jammer-Advanced System and the Communications High-Accuracy Location System Exploitable modifications, was about $902 million.

Testing

The GBCS Program testing failed to identify major system problems. The GBCS Program was scheduled for IOT&E in 1994, 1995, 1996, and 1998; however, each year IOT&E was canceled. When the Product Manager GBCS/AQF determined that the system could not meet the IOT&E entrance criteria, the Product Manager held customer tests in both 1994 and 1995. In addition, the GBCS Program was part of the Army Warfighting Experiment in 1997, and a combined developmental test and operational test took place in 1998.

Customer Tests. A customer test is a test that the Army Operational Test and Evaluation Command conducts for requesting agencies. The requesting agency provides funds and guidance for the test. Based on the test criteria used, the 1994 and 1995 customer tests concluded that the GBCS Program was operationally effective. Those tests did not accurately reflect the performance of the GBCS Program because the scope of testing was limited, the test criteria were nonquantitative, and the test criteria did not include all of the critical operational issues and criteria for the GBCS Program. As a result, the GBCS Program met the criteria for those tests even though the systems did not perform well.

1994 Customer Test. The purpose of the 1994 customer test was to assess the operational effectiveness of the GBCS-Light System. The test report concluded that the GBCS-Light System demonstrated operational effectiveness; however, the system was slow to detect both single-channel and low-probability-of-intercept signals. The test was limited to the very high frequency spectrum from 20 to 88 megahertz and was conducted at night because of air conditioning concerns. In addition, the system operators were instructed not to broadcast over the radio during collection operations because it would interfere with the operation of the GBCS-Light System. The test criteria did not include several of the critical operational issues and criteria. The test did not assess situational development, target development, target acquisition, mean time between system abort, or mean time to repair. Finally, the test criteria used were nonquantitative. For example, the test criteria stated that the GBCS-Light System must intercept single channel and low-probability-of-intercept signals in the very high frequency, but the criteria did not specify how many signals were to be intercepted. As a result, the test criteria were met even though a low percent of signals were intercepted.

1995 Customer Test. The purpose of the 1995 customer test was to provide information to assess the operational effectiveness of the GBCS Program. The test assessed two GBCS-Light Systems, one GBCS-Heavy System, and two AQF Systems. The test report concluded that the GBCS-Light System, the GBCS-Heavy System, and the AQF System each demonstrated operational effectiveness; however, the systems intercepted a low percent of signals. The test criteria used were nonquantitative. For example, the test criteria stated that the GBCS-Light Systems, GBCS-Heavy System, and AQF Systems must intercept single channel and low-probability-of-intercept signals,

but they did not specify how many signals were to be intercepted. As a result, the test criteria were met even though a low percent of signals were intercepted.

Testing Oversight. In July 1997, the Director, Operational Test and Evaluation, Office of the Secretary of Defense, informed the Deputy Under Secretary of the Army (Operations Research) that the GBCS Program and its subsystems were placed on the Office of the Secretary of Defense's Test and Evaluation oversight list. Finally, when the GBCS Program did not enter IOT&E in 1998, the Office of the Product Manager GBCS/AQF decided to have a developmental test and operational test (combined test). The combined test was performed to baseline the GBCS Program, to provide information for a fielding decision of GBCS-Light Systems to the 82d Airborne, and to provide support for the Marine Corps Mobile Electronic Warfare Support System's Milestone III decision.

Developmental and Operational Testing. The GBCS-Light System combined test was conducted at Fort Huachuca, Arizona, from June through August 1998. Four GBCS-Light Systems were tested. The system was tested in all of the required frequencies, the critical operational issues and criteria were used to assess the system, and quantitative test criteria were used. The GBCS-Light Systems did not meet 7 of the 11 critical operational issues and criteria. The test criteria specified that the system must intercept 100 percent of the single channel and low-probability-of-intercept signals. As a result, most of the test criteria were not met, and test results showed that the GBCS-Light System did not reliably intercept and locate single channel or low-probability-of-intercept signals. The combined test also identified problems with antenna assembly and erection, isolating subsystem failures, meeting the required setup time, and deployability.

GBCS Program Costs

One Army Research, Development, Test, and Evaluation funding line funded the development of the GBCS-Light System, the GBCS-Heavy System, the AQF System, and the subsystems. The National Security Agency and the Navy also contributed Research, Development, Test, and Evaluation funds. Of the total $532.8 million Research, Development, Test, and Evaluation funds spent, $375.5 million were from the Army, $150 million were from the National Security Agency's Defense Cryptological Program, and $7.3 million were from the Navy.

The limited-procurement-urgent GBCS-Light Systems, the AQF Systems, and their subsystems were procured using $185.8 million Other Procurement, Army funds and $136.6 million Aircraft Procurement, Army funds. Also, the Marine Corps added about $46.7 million in Procurement funds.

The Office of the Product Manager GBCS/AQF received about $826 million from 1989 through 1999 in Army Research, Development, Test, and Evaluation; Other Procurement, Army; Aircraft Procurement, Army; and National Security Agency funding. During the audit, we reviewed the amount

of funds that the Army withheld from the Office of the Product Manager GBCS/AQF. Because of the move from Vint Hill Farms, Virginia, to Fort Monmouth, New Jersey, we were unable to obtain information for the years before 1996. From 1996 through 1999, Congress appropriated a total of $278.8 million to the Office of the Product Manager GBCS/AQF. Of the funds appropriated, the Army withheld $8.3 million, or about 4 percent, from the Office of the Product Manager GBCS/AQF. The withhold is referred to as taxing, which is not unique to the GBCS Program and is universally applied by the Army to address such things as the Small Business Innovative Research program and inflation expenses.

Management Initiatives

The GBCS Program had problems from the onset. The Product Manager GBCS/AQF at the time of the audit inherited the GBCS Program along with its problems in August 1997. The GBCS Program had contract cost overruns of $45.7 million with Raytheon Systems Company and $9 million with Lockheed Martin Federal Systems. The Product Manager made several positive efforts to improve the GBCS Program by doing the following:

- eliminating conflicting direction to the contractor by reducing the number of contracting officer representatives from six to one;
- terminating the GBCS-Heavy System because of affordability issues and performance shortfalls identified during development testing;
- terminating the development of the Tactical Communications Jammer-Advanced System's electronic attack effort because of low performance;
- supporting alpha contracting at Lockheed Martin Federal Systems, where the Government and contractor work together to develop the statement of work and work together to resolve problems early in the negotiations process;
- eliminating about 15 not-to-exceed delivery orders that were in overrun status and restructuring the contract to eliminate $6 million in debt to Lockheed Martin Federal Systems;
- establishing an integrated product team; and
- investigating commercial-off-the-shelf products for the communications intelligence, electronic support measures, manpack capabilities, electronic attack capabilities, and data links for the Prophet System.

Conclusion

The GBCS Program problems resulted from business decisions made early in the program. The management structure was fragmented, which was not conducive to effectively managing the GBCS Program and integrating the subsystems. The Source Selection Authority awarded an engineering, manufacturing, and development contract to an inexperienced contractor. Contract management did not prevent late deliverables, cost growth, and acceptance of limited-procurement-urgent systems, which did not meet the system's operational requirements. The GBCS Program awarded a build-to-model production contract in November 1995 even though the GBCS-Light System was slow to detect signals during the July 1994 customer test and even though the engineering, manufacturing, and development contractor, Raytheon Systems Company, warned that the system was not ready.

The GBCS Program exceeded the acquisition category thresholds defined in DoD Regulation 5000.2-R and should have been reclassified as an Acquisition Category II program in 1992 and as an Acquisition Category I program in 1995. As of January 1999, the GBCS Program had spent $532.8 million in Research, Development, Test, and Evaluation funds.

We did not make any recommendations on the GBCS Program because the Army planned to transition from the GBCS Program to the Prophet System. Our concerns regarding the Prophet System are stated in finding B of this report.

B. The Ground Based Common Sensor Program's Transition to the Prophet System

The Army planned to transition from the GBCS Program to the Prophet System and enter the program life cycle at Milestone II without the documentation required for a Milestone II decision. Specifically, the Army had not prepared a valid mission needs statement or analysis of alternatives. The Army contended that it did not need to prepare or update the required documentation for the Prophet System because the Prophet System was to be a transition, not a new start. The Prophet System was to be a transition from the GBCS Program, which originated from the six legacy systems that were fielded in the 1970s and 1980s. As a result of not complying with prescribed milestone exit criteria, the Prophet System would be in noncompliance with DoD Regulation 5000.2-R and would face increased risk.

Prophet System Description

The Prophet System was to replace four of the six original legacy systems, the Quickfix, the Teammate, the Trafficjam, and the Trailblazer. The Teampack System was retired, and the Tactical Communications Jammer System was upgraded to the Tactical Communications Jammer-Advanced System. The Prophet System was to be the Division and Armored Cavalry Regiment Commander's principal signals intelligence system. The Prophet System was to provide the Tactical Commander with an enhanced situational awareness capability, battlespace visualization, target development, and force protection throughout the division. The Prophet System was to consist of the Prophet Control System, the Prophet Air System, and the Prophet Ground System.

- The Prophet Control System was to remotely control the receivers on the air and ground platforms, task the ground sensors, and preprocess the locational data.
- The Prophet Air System was to provide the deep looking capability of detecting, identifying, and locating all radio frequency emitters throughout the area of operations and electronic attack capabilities.
- The Prophet Ground System was to provide early entry protection in a man-packable system that could be vehicle mounted with an on-the-move collection and reporting capability and an electronic attack capability.

The Prophet System's primary mission would be to detect, identify, locate, track, and graphically depict the radio frequency emitters on the battlefield.

Transition Plans of the Army

The Army planned to obtain an Army Systems Acquisition Review Council decision on the Prophet System in the second quarter of FY 2000. The Army wanted the Prophet System to enter the program life cycle in Milestone II, the Engineering, Manufacturing, and Development Phase. On February 9, 1999, the Army Training and Doctrine Command provided two memorandums that justified not developing a mission needs statement or performing an analysis of alternatives. The first memorandum stated that the Prophet System would not require a mission needs statement because it is an evolutionary development of the GBCS Program, which was a transition from the original legacy systems that existed before the documentation requirement. Referring to the Prophet System as a transition and not a new start program does not exempt the Army from complying with DoD Directives and Regulations. The Army needs to develop a mission needs statement for the Prophet System because the mission needs for the original legacy systems are outdated. The second memorandum stated that a list of events that took place in an attempt to get consensus on the development of a draft Prophet System operational requirements document was an analysis of alternatives for the Prophet System.

The Office of the Product Manager GBCS/AQF also provided a Modern Technology Draft Report, "GBCS-21 Prophet Project Plan and Technical Analysis of Alternatives for Prophet Ground and Air," December 28, 1998. The report was an analysis of different Prophet Ground System configurations using the man-packable radio and the high-mobility multipurpose wheeled vehicle. Neither of those documents met the criteria for an analysis of alternatives as set forth in the DoD Regulation 5000.2-R, Part 2.4, "Analysis of Alternatives." The Regulation states that the analysis of alternatives is a part of the cost-as-an-independent-variable process. The analysis is intended to aid and document decisionmaking by illuminating the risks, the uncertainty, and the relative advantages and disadvantages of the alternatives being considered. The analysis of alternatives shows the sensitivity of each alternative to possible changes in the key assumptions, such as threat, and variables, such as selected performance capabilities. Decisionmakers can use the analysis to judge whether any of the proposed alternatives offer sufficient military or economic benefit, or both, to be worth the cost.

The Army Strategy for the Prophet System

The Office of the Product Manager GBCS/AQF scheduled the Prophet System's IOT&E for FY 2007, with fielding of the Prophet Ground System in FY 2008 and fielding of the Prophet Air System in FY 2009. The Office of the Product Manager GBCS/AQF planned to start fielding an interim solution for the Prophet Ground Systems in FY 2001. The Prophet Ground System's interim solution was to be a man-packable radio configured to a high-mobility multipurpose wheeled vehicle. The interim solution for the Prophet Ground Systems was estimated at $78.6 million, with fielding of the interim Prophet

Ground Systems occurring in FY 2001. The draft operational requirements document, dated December 1998, lists the required systems quantity as the following:

- two Prophet Ground Systems for each military intelligence direct support company in the division and four for each armored cavalry regiment,
- one Prophet Control System for each division and armored cavalry regiment, and
- six Prophet Air Systems for each division and four for each armored cavalry regiment.

Prophet System Costs

The Army decided that the Prophet Air System, the Prophet Ground System, and the Prophet Control System are one program. The Office of the Product Manager GBCS/AQF estimated that the Prophet System, with an IOT&E scheduled for FY 2007, would cost about $512.2 million in Research, Development, Test, and Evaluation funds. According to the Office of the Product Manager GBCS/AQF, the estimated production costs for the Prophet System are about $16.3 million for each Prophet Air System, about $5 million or $6 million for each Prophet Ground System, and about $10 million to $12 million for each Prophet Control System. The estimated expenditure for the Prophet System in Research, Development, Test, and Evaluation funds qualifies the program as an Acquisition Category I program according to the DoD Regulation 5000.2-R. The DoD Regulation 5000.2-R, Part 1.3.1, "ACAT [Acquisition Category] 1," states that an Acquisition Category I program is estimated to require a total expenditure of more than $355 million (FY 1996 constant dollars) in Research, Development, Test, and Evaluation funds, or $2.135 billion in Production funds. If the Prophet System is to be treated strictly as a continuation of the GBCS Program and the preceding legacy systems, then all Research, Development, Test, and Evaluation funds spent on those programs must also be included in the Prophet System's estimates for research, development, test, and evaluation costs. The research, development, test, and evaluation costs for the GBCS Program and the Prophet System would total about $1 billion. We were unable to determine the cost of developing the original legacy systems. The Army should determine the Prophet System's acquisition category based on program size, complexity, risk, and congressional interest. The Office of the Product Manager GBCS/AQF stated that it would recommend an Acquisition Category I designation for the Prophet System at the Army Systems Acquisition Review.

Conclusion

The Army planned to have the Prophet System begin in Milestone II without revising the mission needs statement from the original legacy systems. The Army needs to reevaluate its operational needs compared with the current and projected threat based on an estimated system fielding date. Also, the Army needs to prepare an analysis of alternatives to the Prophet System. The analysis of alternatives would help decisionmakers determine whether the Prophet System would be the most cost-effective answer to the battlefield deficiencies stated in the mission needs statement. Without up-to-date information, the Army may field a costly system in FYs 2008 and 2009 that does not satisfy the signals intelligence needs of the Army at that time.

Recommendations, Management Comments, and Audit Response

B. We recommend that the Assistant Secretary of the Army (Acquisition, Logistics, and Technology):

1. Require the Army Training and Doctrine Command to prepare a current mission needs statement for the Army Intelligence and Electronic Warfare mission area based on the current and projected threat.

2. Designate an independent activity to prepare an analysis of alternatives to meet the current validated mission needs statement for the Army Intelligence and Electronic Warfare mission area.

3. Determine the Prophet System's acquisition category based on the program size, complexity, risk, and congressional interest.

Management Comments. The Office of the Assistant Secretary of the Army (Acquisition, Logistics, and Technology) nonconcurred with Recommendations B.1. and B.2. and concurred with Recommendation B.3. The basis for the nonconcurrence was that the Prophet System is a restructuring of the Acquisition Category III GBCS and AQF Programs; that a mission needs statement and analysis of alternatives are not required because the Prophet has not been designated as an Acquisition Category I program; and that other documents articulate the mission needs and provide the basis for a preliminary analysis of alternatives study for the Prophet System.

Audit Response. The Army comments were partially responsive. As stated in the report, the Prophet System's research, development, test and evaluation costs and production costs easily exceed DoD Regulation 5000.2-R thresholds for an Acquisition Category I program. Therefore, a mission needs statement and an analysis of alternatives will be required to be compliant with DoD regulations. In addition the Army would benefit from developing a mission needs statement and performing an analysis of alternatives because the original

program concept was developed in the 1980s based on the mission needs of the legacy systems fielded in the 1970s and 1980s and it has not been analyzed since. Also, as this report states, the analysis of alternatives would help decisionmakers determine whether the Prophet System would be the most cost-effective answer to the battlefield deficiencies identified in the mission needs statement.

The documents listed by the Assistant Secretary of the Army (Acquisition, Logistics, and Technology) as sufficiently documenting the mission needs and the preliminary analysis of alternatives do not meet the intent of the mission needs statement or the analysis of alternatives as described in DoD Regulation 5000.2-R. In order to preclude a repeat of the history of nonperformance that plagued the Ground Based Common Sensor Program, it is imperative that the Prophet System not short-circuit sound acquisition principles, but proceed responsibly in an event-driven, as opposed to a schedule-driven, manner. We request that the Army reconsider its position on Recommendations B.1. and B.2. and provide comments on the final report.

C. Management Control Program

The Program Executive Office did not fully implement an effective management control program because the Program Executive Officer did not task the Product Manager GBCS/AQF to identify and evaluate assessable units at the functional level. As a result, the management control program did not provide reasonable assurance that the resources allocated were safeguarded or protected adequately against waste, fraud, or mismanagement and that organizational, operational, or administrative objectives were accomplished.

Definitions

Management Controls. Management controls are the organization, policies, and procedures used to reasonably ensure that programs achieve their intended results; resources are used consistently with the agency mission; programs and resources are protected from waste, fraud, and mismanagement; laws and regulations are followed; and reliable and timely information is obtained, maintained, reported, and used for decisionmaking.

Assessable Unit. An assessable unit is any organizational, functional (that is, research, development, test, and evaluation; procurement; contract administration; personnel; or organization management, or any combination of them), programmatic, or other applicable subdivision capable of being evaluated by management control assessment procedures.

Management Controls

The Program Executive Officer did not task the Product Manager GBCS/AQF to identify and evaluate assessable units at the functional level. DoD Directive 5010.38 requires DoD managers to implement a comprehensive strategy for management controls. The Deputy Program Executive Officer identified all direct reporting project managers within his organization as the assessable unit. The nondirect reporting product managers were not identified as assessable units. For example, the Project Manager for Signals Warfare was an assessable unit rather than the Office of the Product Manager GBCS/AQF. Although the Office of the Product Manager GBCS/AQF made assurance to the Project Manager for Signals Warfare that it assessed its organization and discovered no management control deficiencies, it did not provide us with supporting documentation showing that the Office of the Product Manager GBCS/AQF identified and evaluated assessable units at the functional level. The Deputy Program Executive Officer did not task product managers with the responsibility to identify assessable units at the functional level within their offices and to perform self-evaluations. We reviewed the overall annual statements of assurance for October 10, 1997, and September 25, 1998. No material management control weakness was noted for the GBCS Program

because the functional levels were not evaluated as an assessable unit. The Deputy Program Executive Officer partially complied with the management control procedures by submitting an annual statement of assurance to the Office of the Assistant Secretary of the Army (Acquisition, Logistics, and Technology); however, the Program Executive Office for Intelligence, Electronic Warfare and Sensors lacked a management control program which ensured that assessments were performed at the functional level for each program.

As part of the personnel management controls, we reviewed time and attendance records, specific travel vouchers, and flexiplace policies based on employee concerns. The Program Executive Officer took steps to improve management controls by providing more direct supervisory responsibilities for certification of time and attendance and travel vouchers; however, continual oversight must be performed to ensure that these policies will be executed and will work as intended. The flexiplace project was terminated in November 1998.

Identifying Assessable Units. The Deputy Program Executive Officer did not identify functional levels as assessable units within the Office of the Product Manager GBCS/AQF. Instead, the Deputy Program Executive Officer identified the Office of the Project Manager for Signals Warfare as the assessable unit. The GBCS Program was included in the annual statement of assurance prepared by the Deputy Project Manager for Signals Warfare as support to the Program Executive Officer's annual assurance statement. The statement of assurance did not identify any material management control weakness within the GBCS Program. The Deputy Program Executive Officer did not provide us with documentation evidencing that a comprehensive management control program existed to ensure identification and evaluation of assessable units at the functional level.

Adequacy of Management's Self-Evaluation. The DoD Directive 5010.38 requires that the management control process be integrated into the daily management practices of all DoD managers and assigns to the manager of each assessable unit the responsibility and accountability for executing and evaluating management controls. The Deputy Program Executive Officer did not meet the requirements to identify and perform a self-evaluation because no overall management control program existed. The Deputy Program Executive Officer did not task the Office of the Product Manager GBCS/AQF to identify assessable units at its functional levels; therefore, high-risk areas such as research, development, test, and evaluation; major system acquisitions; procurement; contract administration; supply and support operations; personnel; or organizational management, or any combination of them, were not recognized as assessable units.

Management Oversight

The Program Executive Office did not have a management control program that provided the necessary management-level oversight at the functional level to

ensure that the Office of the Product Manager GBCS/AQF managed the GBCS Program efficiently and effectively. The initial management structure for the Office of the Project Manager for Signals Warfare was fragmented and was not effective or conducive to ensuring adequate programmatic controls over the GBCS Program and its subsystems. The management structure changed to improve the management of the GBCS Program by providing the Product Manager GBCS/AQF more centralized control. Also, administrative controls for time and attendance, travel, and flexiplace were inadequate because of insufficient oversight at the Program Executive Office and Project Manager for Signals Warfare level.

Programmatic Controls. A contributing factor to the failure of the GBCS Program within the Program Executive Office for Intelligence, Electronic Warfare and Sensors was that the Office of the Product Manager GBCS/AQF lacked reporting requirements and controls to coordinate between the GBCS Program and the subsystems. The Project Manager for Signals Warfare was the central control for the GBCS Program; however, the Project Manager provided little guidance or oversight to ensure that cost, schedule, and performance parameters were met for the GBCS Program. The absence of a management control program limited the Program Executive Office's oversight of the GBCS Program. The lack of oversight contributed to inappropriate contract management decisions, technical problems, schedule slippages, and unnecessary cost growth. See finding A of this report for details on the programmatic controls.

Administrative Controls. Although administrative policies existed for time and attendance and travel, little oversight existed to ensure that those policies were executed and that they were working as intended. In addition, the absence of a management control program at the GBCS Program level also contributed to inadequate administrative controls. In April 1999, the Program Executive Office issued a revised policy on overtime and was staffing a revised policy on time and attendance and the processing of travel vouchers. During our audit, we noted the following deficiencies relating to timekeeping and travel procedures.

Timesheets. We requested timesheets for the GBCS Program, from August 1997 through January 1999, and found that the Government employees did not certify and submit individual timesheets. Individual certification was not a requirement within the organization. Instead, a one-time log for each pay period listed the names of about 14 Government employees from different projects under the Program Executive Office for Intelligence, Electronic Warfare and Sensors. The time log and, in cases in which leave was taken, the Standard Form 71, "Application for Leave," was provided to the secretary within the Office of the Product Manager GBCS/AQF, who was responsible for entering the data in the automated time, attendance, and production system. The program analyst from the Business Management Division certified the data for only those individuals under the Project Manager for Signals Warfare. Also, the Project Manager for Signals Warfare's timesheet was certified by an individual in the Program Executive Office without obtaining a Standard Form 71 for leave taken. Management provided little oversight to ensure that all employees turned in a Standard Form 71, "Application for

Leave," for each pay period that leave was taken. When asked why some Standard Forms 71 were missing, management stated that the certifying official relied on personal ethics and accountability. As of January 26, 1999, the Program Executive Officer for Intelligence, Electronic Warfare and Sensors revised the certification process to provide more direct supervisory responsibility for the certification of all time and attendance records; however, the Program Executive Officer must conduct oversight on a regular basis.

Travel Vouchers. Our review of selected travel vouchers from August 1997 through January 1999 showed that one individual's mileage costs were paid for trips from the permanent duty station to the designated flexiplace location and vice versa. A discussion with management and a review of the flexiplace policy confirmed that mileage to and from the duty station to the flexiplace location is prohibited.

Effects on Management Controls

The absence or ineffectiveness of management controls constitutes a material management control weakness that must be corrected, based on DoD Instruction 5010.40. A management control program supports the effectiveness and the integrity of every step of a process and provides continual feedback to management for corrective action. The management control program at the Program Executive Office level did not provide reasonable assurance that the resources allocated were safeguarded or protected adequately against waste, fraud, or mismanagement and that organizational, operational, or administrative objectives were accomplished.

We understand that management control costs must not exceed the benefits derived; however, the fact that the GBCS Program has been plagued with technical problems, cost growth, and poor management decisions warranted management's oversight at all levels to ensure timely development and fielding of the GBCS Program. We discussed the need for a management control program with the Program Executive Officer, his Deputy, and the Product Manager GBCS/AQF. We provided the Office of the Product Manager GBCS/AQF with guidance for developing a management control program that will evaluate the functional areas within the GBCS Program.

Management Initiatives

We commend the Product Manager GBCS/AQF for taking immediate action to develop a management control program for the Office of the Product Manager GBCS/AQF. The Product Manager GBCS/AQF provided a signed management control plan, dated April 9, 1999, with an effective date of May 1, 1999. As part of the management control program, the Product Manager GBCS/AQF identified program management, which would include travel and timesheets; program and technical management; financial management; contract

administration; logistics; and property as assessable units and designated associated risk factors. For self-evaluation purposes, a questionnaire was developed for each of the assessable units to ensure that the program works efficiently and effectively and that the self-evaluation provides safeguards against fraud, waste, and abuse. Although the Office of the Product Manager GBCS/AQF developed a management control program, the Program Executive Office did not have a management control plan that tasked each product manager to develop a management control plan within his or her office.

Recommendations and Management Comments

C. We recommend that the Program Executive Officer for Intelligence, Electronic Warfare and Sensors:

1. Task each product office to assess the functional levels of each program as part of the management control program.

2. Provide training to managers on their responsibilities for identifying assessable units and performing a self-evaluation.

3. Review program management and administrative controls over timesheets and travel vouchers as part of its self-evaluation for the Ground Based Common Sensor Program.

Management Comments. The Program Executive Officer for Intelligence, Electronic Warfare and Sensors concurred, stating that the Program Executive Office has already taken steps to improve and enforce its management control processes. The Program Executive Office is preparing for the next annual assurance statement and has prepared for release comprehensive guidelines for each Project Manager (including nondirect reporting elements) to address in the next review cycle. The Program Executive Office also contacted the local servicing Internal Control and Audit Compliance office to obtain assistance in training management staff and monitoring internal controls.

Appendix A. Audit Process

Scope

We conducted the audit of the GBCS Program in response to a congressional request. During the audit, we conducted interviews with DoD personnel and contractor employees, General Accounting Office representatives, and congressional staff from the House Permanent Select Committee on Intelligence. We reviewed Product Office, contractor, acquisition, testing, cost, and budget documentation dated from FY 1988 through FY 1999. We reviewed policies and procedures as they pertained to the management control program. We also conducted tests for fraud, waste, and abuse and reviewed personnel training histories of the program decision authorities.

DoD-Wide Corporate-Level Government Performance and Results Act Goals. In response to the Government Performance and Results Act, the Department of Defense has established 6 DoD-wide corporate-level performance objectives and 14 goals for meeting these objectives. This report pertains to achievement of the following objective and goal:

> **Objective**: Prepare now for an uncertain future. **Goal:** Pursue a focused modernization effort that maintains U.S. qualitative superiority in key war fighting capabilities. **(DoD-3)**

DoD Functional Area Reform Goals. Most major DoD functional areas have also established performance improvement reform objectives and goals. This report pertains to achievement of the following functional area objective and goal:

> **Objective:** Deliver great service. **Goal:** Deliver new major defense systems to the user in 25 percent less time. **(ACQ-11)**

General Accounting Office High-Risk Area. The General Accounting Office has identified several high-risk areas in DoD. This report provides coverage of the Defense Weapons Systems Acquisition high-risk area.

Methodology

Use of Computer-Processed Data. We did not rely on computer-processed data or statistical sampling procedures.

Use of Technical Experts. Personnel from the Audit Followup and Technical Support Directorate assisted with the audit. Electronics engineers reviewed the GBCS System operational requirements documentation and the test criteria and results from the combined test.

Audit Period and Standards. We performed this program audit from August 1998 through March 1999, in accordance with auditing standards issued by the Comptroller General of the United States, as implemented by the Inspector General, DoD. We included tests of management controls as necessary.

Contacts During the Audit. We visited or contacted individuals and organizations within DoD, Lockheed Martin Federal Systems, Raytheon Systems Company, TRACOR Aerospace Electronic Systems, and Sanders Lockheed Martin. Further details are available on request.

Management Control Program Review

DoD Directive 5010.38, "Management Control Program," August 26, 1996, requires DoD organizations to implement a comprehensive system of management controls that provides reasonable assurance that programs are operating as intended and to evaluate the adequacy of the controls.

Scope of Review of the Management Control Program. We reviewed the adequacy of the GBCS Program management controls within the Office of the Product Manager GBCS/AQF for program costs, technical approach, and program management performance. We reviewed the GBCS Program annual statements of assurance for FYs 1997 and 1998 to determine whether management identified assessable units and performed self-evaluations. In addition, we reviewed United States Code Title 10, Armed Forces, December 31, 1996, "Program Based Management: Acquisition Programs," which states that the Secretary of Defense is to include in the annual report, submitted to Congress pursuant to Section 113, whether a major or nonmajor acquisition program is achieving, on average, 90 percent of cost, performance, and schedule goals. However, Public Law 105-85, November 18, 1997, Section 851, "Conformance of Policy on Performance Based Management of Civilian Acquisition Programs With Policy Established for Defense Acquisition Programs," was amended to eliminate the nonmajor acquisition reporting requirement to Congress.

Adequacy of the Management Control Program. We identified material management control weaknesses for the Program Executive Office and the Office of the Product Manager GBCS/AQF as defined by DoD Directive 5010.38. The Program Executive Office's management control program was inadequate. Finding C discusses the material deficiencies in detail. The Deputy Program Executive Officer provided us with annual statements of assurance for FYs 1997 and 1998, as well as each project's assurance statement. Neither the Program Executive Office nor the Office of the Product Manager GBCS/AQF provided us with management control plans,

vulnerable risk assessments, and self-evaluations. A memorandum from the Program Executive Office provided management control program points-of-contact, dated August 21, 1998, which contained Army guidelines for preparation of the FY 1998 annual statement of assurance. When asked about the identification of assessable units and self-evaluation, the Program Executive Office stated that the Department of the Army did not require it to develop a checklist for 1998. Recommendations C.1. and C.2., if implemented, will require that the Program Executive Office task each product office to assess the functional levels of each program and require management to perform a self-evaluation to ensure that each program is working efficiently and effectively. A copy of this report will be provided to the senior official responsible for management controls in the Department of the Army.

Adequacy of Management's Self-Evaluation. The Deputy Program Executive Officer and the Product Manager GBCS/AQF did not identify and report the material management control weaknesses identified by the audit because the Deputy Program Executive Officer did not require management to identify assessable units or to perform a self-evaluation on risks from each program. The annual statements of assurance provided to us by the Program Executive Office and the Project Manager for Signals Warfare did not include a self-evaluation of vulnerable risks. The Deputy Program Executive Officer provided us with the overall annual statement of assurance with supporting assurance letters from each project office. The Program Executive Office's overall assurance statement provided to the Office of the Assistant Secretary of the Army (Research, Logistics, and Technology) identified no deficiencies in the GBCS Program.

Appendix B. Summary of Prior Coverage

During the last 5 years, the General Accounting Office issued two audit reports on the GBCS Program; the Inspector General, DoD, issued one audit report on GBCS fielding; and the Army Audit Agency issued one audit report on spares procurement for the GBCS Program.

General Accounting Office

General Accounting Office Report No. GAO/NSIAD-98-3, "Electronic Warfare: Test Results Do Not Support Buying More Common Sensor Systems," March 1998.

General Accounting Office Report No. GAO/NSIAD-96-175, "Electronic Warfare: Additional Buys of Sensor System Should Be Delayed Pending Satisfactory Testing," September 1996.

Inspector General, DoD

Inspector General, DoD, Report No. 99-173, "Ground Based Common Sensor System Fielding," June 2, 1999.

Army Audit Agency

Army Audit Agency Report No. AA 98-250, "Initial Spares," July 1998.

Appendix C. Chronology of Events for the Ground Based Common Sensor Program

July 1988	82d Airborne Division signed an ONS for a highly mobile radio receiving system.
November 1988	An informal in-process review was held to review activities and requirements; problems and solutions were reconstituted and reconfirmed.
February 1989	The concept for transitioning Trailblazer into the GBCS-Heavy, Teammate into the GBCS-Light, and the Quickfix into the AQF, and the use of Tactical Communications Jammer-Advanced and Communications High-Accuracy Location Systems Exploitable common modules was presented to and approved by the Program Executive Officer.
March 1989	Department of the Army Headquarters reviewed the GBCS and the AQF program strategy.
August 1989	Assistant Secretary of the Army (Acquisition, Logistics, and Technology) approved the program plan and strategy.
October 1989	Office of the Under Secretary of Defense (Comptroller) approved the GBCS-Light, GBCS-Heavy, and AQF concepts as upgrades to the Teammate, Trailblazer, and Quickfix Systems.
April 1990	The Office of the Assistant Secretary of Army (Acquisition, Logistics, and Technology) validated the plan for transitioning the legacy systems into the GBCS-Light, GBCS-Heavy, and AQF Systems.
October 1990	The operational requirements document was approved for the GBCS-Light and the GBCS-Heavy Systems.
December 1990	The Commanding General of the Communications and Electronics Command and the Program Executive Officer approved the acquisition strategy and the acquisition plan.
September 1991	The cost-plus-award-fee contract was awarded to Electrospace Systems, Incorporated (now Raytheon Systems Company) for the GBCS Program (referred to as the Intelligence Electronic Warfare Common Sensors Program).

October 1992	The operational requirements document was approved for the AQF.
February 1993	The Marine Corps' Mobile Electronic Warfare Support System was added to the Raytheon contract.
June 1993	Raytheon submitted a $4.5 million request for equitable adjustment for late receipt of Government-furnished equipment.
July 1994	A customer test was performed for the GBCS-Light System.
November 1994	The Program Executive Officer approved the acquisition decision memorandum for a limited-procurement-urgent contract for 12 GBCS-Light Systems.
December 1994	Raytheon modified the limited-procurement-urgent contract for the production of six GBCS-Light Systems.
March 1995	Raytheon notified the Office of the Product Manager GBCS/AQF that the production request for proposal should be delayed because the system was not mature. The contracting officer assured Raytheon that the system testing would be completed well before contract award.
September 1995	A customer test was performed for the GBCS-Light System, the GBCS-Heavy System, and the AQF System.
September 1995	The Government directed Raytheon to stop work on and to submit all technical data packages "as-is" to the Government within 30 days.
November 1995	The Program Executive Officer approved the low-rate initial production of seven AQF Systems.
November 1995	The Government awarded Loral Corporation (now Lockheed Martin Federal Systems) a build-to-model contract for an evaluated price of $276.5 million.
December 1996	The Government modified the Lockheed Martin contract for work for the IOT&E 1998.
March 1997	Raytheon notified the Office of the Product Manager GBCS/AQF of the $45.7 million contract cost overrun.
April 1997	The Government modified the Lockheed Martin contract for work for the IOT&E 1999.

July 1997	The Director, Operational Test and Evaluation, notified the Deputy Under Secretary of the Army that the GBCS Program and its subsystems were placed on the Office of the Secretary of Defense's Test and Evaluation oversight list.
August 1997	The DD Forms 250 were signed with Raytheon for the Mobile Electronic Warfare Support Systems.
August 1997	Lockheed Martin submitted a contract restructure because models were delivered incomplete, hardware was not available, and Raytheon data were incomplete.
September 1997	The transition of the Office of the Product Manager GBCS/AQF from Vint Hill Farms, Virginia, to Fort Monmouth, New Jersey, was completed.
December 1997	The Government negotiated a $7.8 million contract restructure with Lockheed Martin Federal Systems.
January 1998	Government issued a stop-work order for the integration of the electronic attack into the AQF System.
June 1998	Government issued a stop-work order on the GBCS-Heavy System.
June-August 1998	The developmental test and operational tests were performed on the GBCS-Light System.
July 1998	The Project Office signed DD Forms 250 with Raytheon for the limited-procurement-urgent contract for the GBCS-Light Systems.
August 1998	Raytheon submitted a proposal for equitable adjustments for five separate cost-and-schedule delays caused by the Government.
August 1998	The Government modified the Lockheed Martin contract to include a Prophet study at a cost of $256,000.
September 1998	The Government issued stop-work order on Lockheed Martin efforts for IOT&E 1998 and 1999.
September 1998	The Office of the Product Manager GBCS/AQF closed the Raytheon contract.
April 1999	The Army Training and Doctrine Command approved the Prophet operational requirements document.

Appendix D. Report Distribution

Office of the Secretary of Defense

Under Secretary of Defense for Acquisition and Technology
  Director, Defense Logistics Studies Information Exchange
Under Secretary of Defense (Comptroller)
  Deputy Chief Financial Officer
  Deputy Comptroller (Program/Budget)
Assistant Secretary of Defense (Command, Control, Communications and Intelligence)
Director, Operational Test and Evaluation

Department of the Army

Assistant Secretary of the Army (Financial Management and Comptroller)
Assistant Secretary of the Army (Acquisition, Logistics, and Technology)
  Program Executive Officer for Intelligence, Electronic Warfare and Sensors
    Project Manager for Signals Warfare
Commander, Army Forces Command
  Commander, XVIII Airborne Corps
    Commander, 82d Airborne Division
    Commander, 313 Military Intelligence Battalion
Commander, Army Training and Doctrine Command
Auditor General, Department of the Army
Director, Intelligence Electronic Warfare Test Directorate, Operational Test and Evaluation Command

Department of the Navy

Assistant Secretary of the Navy (Financial Management and Comptroller)
Auditor General, Department of the Navy
Commanding General, Marine Corps Systems Command

Department of the Air Force

Assistant Secretary of the Air Force (Financial Management and Comptroller)
Auditor General, Department of the Air Force

Other Defense Organizations

Director, Defense Contract Audit Agency
Director, Defense Logistics Agency
Director, National Security Agency
    Inspector General, National Security Agency
Inspector General, Defense Intelligence Agency

Non-Defense Federal Organizations

Office of Management and Budget
General Accounting Office
    National Security and International Affairs Division
        Technical Information Center

Congressional Committees and Subcommittees, Chairman and Ranking Minority Members

Senate Committee on Appropriations
Senate Subcommittee on Defense, Committee on Appropriations
Senate Committee on Armed Services
Senate Select Committee on Intelligence
Senate Committee on Governmental Affairs
House Committee on Appropriations
House Subcommittee on Defense, Committee on Appropriations
House Committee on Armed Services
House Committee on Government Reform
House Subcommittee on Government Management, Information, and Technology, Committee on Government Reform
House Subcommittee on National Security, Veterans Affairs, and International Relations, Committee on Government Reform
House Permanent Select Committee on Intelligence

Assistant Secretary of the Army (Acquisition, Logistics, and Technology) Comments

DEPARTMENT OF THE ARMY
OFFICE OF THE ASSISTANT SECRETARY
ACQUISITION LOGISTICS AND TECHNOLOGY
103 ARMY PENTAGON
WASHINGTON DC 20310-0103

REPLY TO
ATTENTION OF

17 JUN 1999

SAAL-SA

MEMORANDUM FOR THE INSPECTOR GENERAL, DEPARTMENT OF DEFENSE (AUDITING)

SUBJECT: Audit of the Ground Based Common Sensor Program (GBCS) (Project No. 8AD-5033.01)

I have reviewed the subject report and the overall findings Comments related to specific recommendations are included in the enclosure.

I have directed my staff to work closely with the Program Executive Officer for Intelligence, Electronic Warfare and Sensors (PEO IEW&S), the GBCS Product Manager and all other applicable Department of Defense agencies to ensure the deficiencies cited in the subject report are corrected and monitored for continued compliance.

The Assistant Secretary of the Army (ALT) point-of-contact is Mr. Bob Kusuda, (703) 604-7017, DSN 664-7017 or (email: kusudar@sarda.army mil).

JOSEPH L. YAKOVAC
Brigadier General, GS
Deputy for Systems Management
and Horizontal Technology Integration

Enclosure

CF:
PEO, IEW&S
DEPUTY CHIEF OF STAFF FOR OPERATIONS, ATTN: DAMO-FDI
THE INSPECTOR GENERAL

SAAL-SA

SUBJECT: Audit of the Ground Based Common Sensor Program (Project No 8AD-5033.01)

The following comments to the report's recommendations are provided:

Recommendation B1: Require the Army Training and Doctrine Command to prepare a current mission needs statement (MNS) for the Army Intelligence and Electronic Warfare mission area based on the current and projected threat.

Response: Non concur

Rationale: The Prophet program is the Army's primary tactical electronic warfare (EW) asset at the Division level. Its foundation is based upon a restructuring of the ACAT III Ground Based Common Sensor (GBCS) and Advanced Quickfix (AQF) programs IAW TP 71-9, no formal MNS is required for less than ACAT I level programs. Although Prophet may be designated an ACAT I program in the future, the Army believes the mission need for the Prophet system has been sufficiently articulated in other documents These include:

- SIGINT XXI White Paper, Feb 98
- Intelligence XXI Concept (TR Pam 525-75, 1 Nov 96)
- Unified Cryptologic Architecture (UCA)
- GBCS Required Operational Capabilities (ROC), Oct 90
- AQF Operational Requirements Document (ORD), Oct 92
- Prophet ORD, Apr 99

Furthermore, the staff of the Director for Force Structure, Resources and Assessments, Joint Chiefs of Staff (J8) have stated that a MNS will probably not be required for Joint Requirements Oversight Committee (JROC) approval as the need for Prophet is sufficiently supported in existing documentation

Recommendation B2: Designate an independent activity to prepare an analysis of alternatives to meet the current validated mission needs statement for the Army Intelligence and Electronic Warfare mission area

Response: Non concur

Rationale: The Prophet program comes from a restructuring of the GBCS/AQF programs - ACAT III programs. IAW DODD 5000 2R, an AOA is not required for programs less than ACAT I Even though Prophet may be designated as an ACAT I program in the future, the Army believes that the GBCS/AQF programs and their predecessors established the validity of the ground/airborne tactical

SIGINT mix which is carried forward in the Prophet Program. Since GBCS/AQF were approved programs in the Engineering and Manufacturing Development (EMD) lifecycle phase of development, the Army believes that sufficient study and analysis has been previously performed to allow Prophet to proceed with the Army Systems Acquisition Review Council (ASARC) process. Although the DODIG stated the report "GBCS-21 Prophet Project Plan and Technical Analysis of Alternatives for Prophet Ground and Air, Dec 98", was insufficient to satisfy the criteria for an AOA, the report, when combined with the following, provides the basis for a preliminary AOA.

- TSM IPT for Prophet ORD Development, May 98
- 2010 Tactical SIGINT Sensor Challenge Study, Apr 97
- Army Action Plan for Unified Cryptologic Architecture
- Army SIGINT Capstone Requirements Document (In staffing)
- CG, USAIC & Ft. Huachuca's Memo on Future Army SIGINT/EW, Apr 98
- Intelligence XXI Concept (TR. Pam 525-75, 1 Nov 96)
- Prophet ORD, Apr 99

The Army supports the need for additional analysis focused on substantiating requirements identified in the approved Prophet ORD This analysis should be focused on validating requirements and Key Performance Parameters (KPP) stated in the ORD that support milestone decisions for an Acquisition Category I program.

Recommendation B3: Determine the Prophet System's acquisition category based on the program size, complexity, risk, and congressional interest

Response: Concur

Recommendations C1 through C3 are addressed to the Program Executive Officer, Intelligence, Electronic Warfare and Sensors who will provide comments via separate correspondence.

Program Executive Office Comments

REPLY TO ATTENTION OF

DEPARTMENT OF THE ARMY
PROGRAM EXECUTIVE OFFICE
INTELLIGENCE, ELECTRONIC WARFARE AND SENSORS
FORT MONMOUTH, NEW JERSEY 07703-5301

SFAE-IEW&S-BM

21 June 1999

MEMORANDUM FOR Inspector General, Department of Defense
400 Army Navy Drive, Arlington, VA 22202

SUBJECT: PEO IEW&S Response to Draft Audit Report on The Ground Based Common Sensor Program, (Project No. 8AD-5033.01), dated May 19, 1999

1. I have reviewed the subject draft report and offer comments to same at Enclosure 1.

2. My staff and I remain available to you and your staff as we seek closure on this effort.

3. My principal point of contact within the PEO staff is Mr. Lou Catalano, Chief, Business Management Division. He can be reached at DSN 987-4743 or by email at catalano@mail1.monmouth.army.mil.

David R. Gust

Encl
as

DAVID R. GUST
Major General, USA
Program Executive Officer
Intelligence, Electronic Warfare & Sensors

AUDIT NOTES
FOLLOW ON
PAGES (45-46)

PEO IEW&S
Response to Draft DOD IG Report on
Ground Based Common Sensor
Project No. 8AD-5033.01

In sum, PEO IEW&S concurs with recommendations-C-1 through C-3 of the draft audit report, and we have already taken steps to improve upon our management controls processes In addition, we have contacted the local servicing Internal Control and Audit Compliance (IRAC) organization in an effort to obtain their assistance in training our management staff and to seek their guidance regarding the monitoring of the internal controls. However, we offer the following comments, segregated by areas where we disagree with the findings and by points of additional clarification offered to specific pages of the report:

DISAGREE:

Page 6: Report sates that "the GBCS Program was not based on an identified, documented, and validated mission needs statement ." 1

Comment: The requirement for a Mission Needs Statement (MNS) is not a requirement imposed upon a PEO/PM. Instead, the PEO/PM rely upon validated Operational Requirements Documents (ORDs) as their guiding documents in materiel development The PEO/PM did, in fact, have validated ORDs (or their predecessor, Required Operational Capability (ROC) documentation) in hand for the Ground Based Common Sensor (GBCS) and the Advanced Quick Fix (AQF) In addition, the PEO/PM had received a validated Operational Needs Statement (ONS) from the 82nd Airborne Division to support its development efforts

Page 6: Report states that the "Milestone Decision Authority did not notify the Assistant Secretary of the Army (Research, Development, and Acquisition) that the GBCS Program should have been elevated to an Acquisition Category I or II program " 2

Comment: PEO IEW&S maintains that with three separate requirements documents guiding the development effort, there was no clear delineation among those individual systems which would have supported the merging of all programs into a single ACAT I or II program In addition, the GBCS and AQF programs had separate and distinct Management Decision Packages (MDEPs) addressing their funding profiles within the official RDAISA data base As such, the funds associated with the GBCS program were easily identifiable at the HQDA levels The process for elevation of a program's ACAT level is for HQDA to review the data base with each President's Budget submission and to recommend the appropriate ACAT level at that time Likewise, the Army's PEO structures, and PEO IEW&S in particular, were subjected to numerous HQDA-led studies There was the SARDA restructure of PEOs in 1993; the SAPEA study in 1995; the Army Science Board study conducted in 1996; and the SARDA study of PEO organizational structures conducted in 1998 In each of these successive studies, we addressed the PEO/PM structures, the programs being managed by the PEO and each of its' subordinate elements, and the funding and ACAT levels associated with each program Despite all of these studies, there was never any direction to raise the ACAT level of the GBCS program Thus, HQDA had ample opportunity to direct a change to the GBCS/AQF program if it was deemed warranted. Furthermore, approximately 52% of the total RDTE expenditures were attributable to major sub-systems within the GBCS which, under the Army's Horizontal Technology Initiative (HTI), were common to other systems under development., and thus are not solely attributable to the GBCS program

Page 6/7: Report states that there was no formal reporting mechanism from the GBCS Program's Milestone Decision Authority to [ASA{RDA}]" 3

Comment: The PEO/PM made a decision early on in the program to report, and did in fact formally report the status, through monthly Army Acquisition Program Executive Review System (AAPERS) reports, of the TACJAM-A subsystem which represented the heart and largest dollar component of the systems These reports were forwarded to Army leadership on a recurring basis

Final Report Reference

AUDIT NOTES
FOLLOW ON
PAGES (45-46)

Page 15: Management Initiatives.

4 Comment: The report makes no mention of a series of high level activities directly effecting all aspects of the GBCS/AQF program, to include a series of General Officer meetings in the Summer/Fall/Winter of 1996/1997 These sessions included the DCSINT of the Army, the CG of the Intel Center, and the PEO IEW&S. Discussions centered on whether to pursue an IOTE or to participate in the Army Task Force XXI exercise, as we could not afford to do both. Four separate courses of action were discussed on 30 August 1996. The decision was made to participate in TF XXI to demonstrate the operational value of the systems as the managers were aware of performance issues already known GBCS thus participated in the March 1997 Advanced Warfighting Experiment The fact is that Task Force XXI after action reports identified the GBCS as a "clear winner", which despite its limited functionality, did well in the exercise Additional comments to the effect that "GBCS collected far more during this rotation than the combined efforts of the previous two rotations " (Cdr, 104th MI Bn) were made as testimony to support the operational utility of the system Follow on briefings were held to address the operational value, and based on the TF XXI results, a baseline of capabilities (not necessarily IAW the ROC requirements) was established The GO discussions then resulted in a decision to pursue development of the systems, and all subsequent briefings addressed performance against that baseline of capabilities Further evidence in support of the system came in the form of comments from the Cdr, 4th ID in May '97, when he stated that "[t]actical SIGINT was a success during the FORCE XXI NTC rotation because of the capabilities of the GBCS platform and its crew " In all instances, performance was briefed as either Green or Amber, with no instance of a capability having been downgraded to Red In addition, no less than four program reviews were conducted between November 1996 and August 1997

Deleted Page 23

Page 22: The report states that "the Deputy Program Executive Officer did not . assign management at all levels the responsibility to identify the assessable units within their programs "

Comment: As noted above, a memorandum was issued to every reportable element within the PEO structure, accompanied by a hand-written note from the Deputy PEO which stressed the leadership attention to be devoted to the annual assurance statements Each PM was to identify all elements within their organization for any possible instances of waste, fraud or abuse

Revised Page 23

5 Page 22/23: The report alleges that the DPEO "did not provide the necessary management level oversight to ensure that the Office of the Product Manager GBCS/AQF was managed efficiently and effectively " Yet, the report then states that the management structure changed to improve the management of the GBCS Program

Comment: The fact that the management structure was re-oriented is evidence that in fact the PEO was exercising oversight control over the PM

6 Page 25: The report states that" the Program Executive Office did not have a management control plan that tasked each product manager to develop a management control plan within his or her offices "

Added Page 26

Comment: While it is true that PEO IEW&S did not spell out the need for each office to prepare its own management control plan, the PEO did personally charge each direct reporting element to assess his own area of operation for all possible areas of waste, fraud and abuse The PEO is now in the process of preparing for the next annual assurance statement, and has prepared for release a comprehensive set of guidelines for each PM (including non-direct reporting elements) to address in this next review cycle

CLARIFICATION:

7 Page 7: Report states that "[a]s of January 1999, the GBCS Program had spent $532 8 million in Research Development, Test and Evaluation funds "

Comment: As previously noted, 52% of the RDTE funds expended were in support of the TACJAM-A and CHALS-X subsystems, which, in accordance with the Army's HTI policy, were common to multiple platforms, and thus not uniquely attributable to the GBCS Program

		Final Report Reference
	AUDIT NOTES FOLLOW ON PAGES (45-46)	
Page 9: Comment: Under Management Structure, the report fails to adequately note that the Project Manager for Signals Warfare had overall management responsibility for the subsystem development, and that even under the original management structure, the three Product Managers were responsible for the integration of common subsystems into their own products All PMs and the managers of the critical subsystems reported to the PM SW who had ultimate responsibility		Revised
Page 15: Report states that "[t]he Product Manager made several positive efforts"... the first of which is identified as "restructuring the management of the GBCS-Light System, the GBCS-Heavy System, and the AQF System under one product manager;" Comment: This restructuring was recommended by the PEO IEW&S in April 1996, and in fact was cited in the PEO's request for early activation of the PM GBCS/AQF on 28 January 1997 The restructuring was in place prior to August 1997		Revised Page 9 Deleted Page 15
Page 16: The first sentence under "Conclusion" states that the "GBCS Program problems resulted from business decisions " Comment: Suggest the addition of the words "poor execution and " immediately prior to "business decisions "	8	Revised Pages 17,19,20
Page 17: Report references the "Prophet Command and Control System " Comment: The proper term is "Prophet Control "		
Page 18/19: Report states that the PM was planning "to start fielding interim solutions for both the Prophet Air and the Prophet Ground Systems in FY 2001 " Comment: There is no Interim Prophet Air capability being planned Prophet Air will go through the full ASARC/DAB review as part of the decision making process		Revised
Page 19: The first sentence under "Prophet System Costs" states that the "Army decided that the Prophet Air System and the Prophet Ground System are one program " Comment: The Prophet system consists of Prophet Air, Prophet Ground, and Prophet Control, in accordance with the approved Prophet ORD		Revised
Page 21: Report states that "non-direct reporting project and product managers were not identified as assessable units " Comment: PEO IEW&S has 5 Product Managers who report to three "umbrella", Board-Selected/Chartered with full responsibility for their subordinate elements, Project Managers as part of their Chain of Command Notification of the Annual Assurance Statements were sent to each of the Project Managers with the requirement that they assess their entire organizations Thus, while it is a true statement that the PEO did not issue guidance to the subordinate Product Managers, it is equally true that each Product Manager was to be assessed by their parent PM All parent PMs did report that they had assessed the Product Mangers under their management purview	9	
Page 23: The report states that "[m]anagement provided little oversight to ensure that all employees turned in a Standard Form 71, "application for Leave" for each pay period " Comment: The report implies that all employees should submit a SF 71 for each pay period, even if no leave was to be charged to that pay period There is no such requirement Furnishing of SF-71s are required only to those instances when individuals are to be charged leave If no leave was taken during the particular pay period, then there is no need for SF-71s to be submitted In the absence of SF-71s, the PEO does consider e-mail notification by the employee who has requested leave The report correctly notes that the PEO revised its official policies on the reporting of time and attendance The PEO will continue to monitor adherence to those policies on a recurring basis		Revised Page 24
REQUEST FOR CLARIFICATION: Page 24: Re travel vouchers, the report alleges that one individual's mileage costs were paid for the trip from the permanent duty station to the designated flexiplace and vice versa "		Page 25

AUDIT NOTES
FOLLOW ON
PAGES (45-46)

10

Comment: The PEO has no specific knowledge of such event having occurred The PEO did revoke the flexiplace policy in November 1998, but not because of allegations surrounding travel vouchers Rather the policy was revoked to ensure continuity of program management and leadership

CONCUR:

Page 25 PEO IEW&S agrees with the recommendations surrounding management controls and believe we are on course to improve upon our enforcement of same

Audit Notes

The following audit notes respond to the Program Executive Officer's comments on the report findings.

1. The statement that the GBCS Program was not based on a validated mission needs statement for the Army is factual.

2. The GBCS Program development effort was for the integration of the subsystems onto three platforms and was performed under one Research, Development, Test, and Evaluation Contract. Therefore, the GBCS Program was one program with two operational requirement documents, one for the light and heavy ground platforms and one for the air platform. The total research, development, test and evaluation costs for the subsystems and integration justified the GBCS Program's elevation to an Acquisition Category I program.

3. The statement that there was no formal reporting mechanism from the GBCS Program's Milestone Decision Authority to the Assistant Secretary of the Army (Acquisition, Logistics and Technology) is factual. The formal reporting on the TACJAM-A subsystem "which represents the heart and largest dollar component" is not a formal reporting mechanism for the total GBCS Program.

4. No documentation for these high level activities was provided. We did not include any statements on the success of the Army Task Force XXI Exercise because there were no test results to support the statements.

5. We revised the report to state that "the Program Executive Office did not have a management control program that provided the necessary management-level oversight at the functional level to ensure that the Office of the Product Manager GBCS/AQF managed the GBCS Program efficiently and effectively." Changing the management structure does not replace the requirement for a management control program.

6. The statement that the Program Executive Office did not have a management control plan that tasked each product manager to develop a management control plan within his or her office is factual. We included the corrective actions taken by the Program Executive Office in our summary of management comments on page 26.

7. The expenditures for the Tactical Communications Jammer-Advanced and the Communications High-Accuracy Location System Exploitable were for needed modifications and additional capabilities to the existing Tactical Communications Jammer System and the Communications High Accuracy Airborne Location System to meet the GBCS Program's operational requirements. The system variants that are to be used in other systems, such as the Communications High Accuracy Airborne Location System in the Guardrail and the Superhawk in the Airborne Reconnaissance Low, should be included in their respective program costs.

8. The GBCS Program history and documentation indicates that the program's problems resulted from poor business decisions.

9. We revised the report to state that nondirect reporting product managers were not identified as assessable units. Although all parent project managers reported that they had assessed the product managers under their purview, they did not provide us with supporting documentation showing that the project managers or product managers had identified and evaluated assessable units at the functional level.

10. The statement that one individual's mileage costs were paid for the trip from the permanent duty station to the designated flexiplace and vice versa is factual. We provided the source documents to a representative in the Program Executive Office.

Audit Team Members

The Acquisition Management Directorate Directorate, Office of the Assistant Inspector General for Auditing, DoD, prepared this report.

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